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ABSTRACTS October 8, 2024

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Driving Under the Cognitive Influence of COVID-19: Exploring the Impact of Acute SARS-CoV-2 Infection on Road Safety

Baran Erdik and Derek Homrich AUTHORS INFO & AFFILIATIONS

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FULL TEXT

Abstract

Objective

This study evaluated the association between acute COVID-19 cases and the number of car crashes with varying COVID-19 vaccination rates, Long COVID rates, and COVID-19 mitigation strategies.

Background

The ongoing SARS-CoV-2 pandemic has led to significant concern over long-term post-infection sequelae, especially in the Neurologic domain. Long COVID symptoms, including cognitive impairments, could potentially impact activities requiring high cognitive function, such as driving. Despite various potential impacts on driving skills and the general prevalence of Long COVID, the specific effects on driving capabilities remain understudied.

Design/Methods

This study utilized a Poisson regression model to analyze data from 2020-2022, comparing aggregate car crash records and COVID-19 statistics. This model adjusted for population and included binary variables for specific months to account for stay-at-home orders. The correlation between acute COVID-19 cases and car crashes was investigated across seven states, considering vaccination rates and COVID-19 mitigation measures as potential confounders.

Results

Findings indicate an association between acute COVID-19 rates and increased car crashes with an OR of 1.5 (1.23-1.26 95%CI). The analysis did not find a protective effect of vaccination against increased crash risks, contrary to previous assumptions. The OR of car crashes associated with COVID-19 was comparable to driving under the influence of alcohol at legal limits or driving with a seizure disorder.

Conclusions

The study suggests that acute COVID-19, regardless of Long COVID status, is linked to an increased risk of car crashes presumably due to neurologic changes caused by SARS-CoV-2. These findings underscore the need for further research into the neuropsychological impacts of COVID-19. Further studies are recommended to explore the causality and mechanisms behind these findings and to evaluate the implications for public safety in other critical operational tasks. Finally, neurologists dealing with post-COVID patients, should remember that they may have an obligation to report medically impaired drivers.

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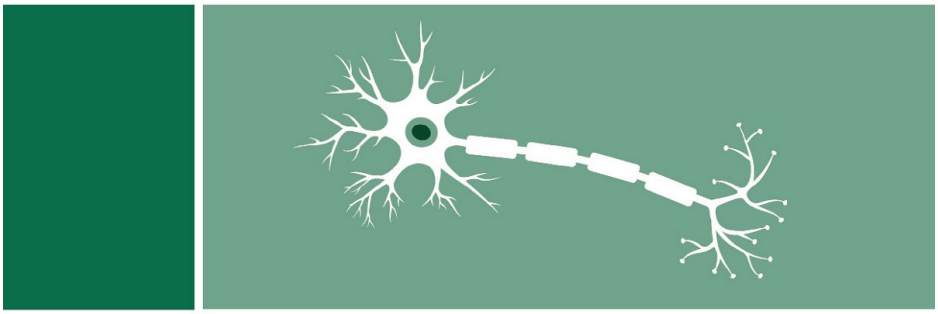

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